

## G-026

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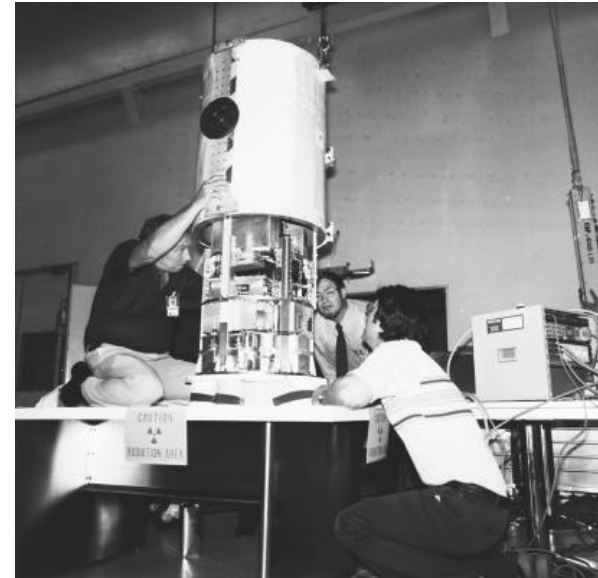
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Research Establishment;  
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Payload Mgr: Dieter Baum

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First in a series of 25 GAS payloads managed by the German Aerospace Research Establishment (DFVLR), G-026 was part of the German material science program called Project MAUS. German scientists anticipated an increased understanding of the preparation of dispersion alloys in space from G-026. They were working with the knowledge that several combinations of two different metals can be dissolved together in their liquid state above a certain temperature (consolute temperature), but cannot be mixed below this temperature. They used such a combination of gallium and mercury in G-026 to investigate the dissolution process above the consolute temperature, as well as, the time-dependent stability of the resulting dispersion, composed of mercury droplets in gallium. For the first time, X-ray recordings were used to provide real-time data of the different states of the experiment sequence. Previously, dispersions could not be observed as they occurred and, instead, clues to the process had to be sought when the solidified samples were returned to Earth.



*X-ray technology would make the first recordings of dispersion alloys forming in space on G-026. Preparing the payload: (L to R) Gary Walters, GAS Field Operations Manager, and German scientists Dr. Gunter Otto and Dr. Peter Vits.*